

BEFORE THE OTAGO REGIONAL COUNCIL

IN THE MATTER of the Resource Management Act 1991 ("the Act")

AND

IN THE MATTER Proposed Plan Change 5A: Lindis Integrated Water Management

**Statement of
Susan Helen McKeague**

**Reply to Questions
ON BEHALF OF THE LINDIS CATCHMENT GROUP LTD
Presented to hearing panel on 6 April 2016**

1. Storage

a) Can we trust the Aqualinc storage cost calculations?

Yes. They are an indication of the costs required to replace the loss of reliable water as a result of the alternate minimum flow options. Harvesting winter water to replace lost reliability is a mitigation option that is often suggested as the solution and Aqualinc offered relative costs of replacing the lost water in situ. However the next step in applying this mitigation option to any property in the Lindis is the on the ground assessment of topography, soil type and location and have heard there are very few suitable large storage options.

b) Access to winter water: Lindis River

Although there are limited storage sites, the few farmers that do harvest water to storage access water any of the 12 months in a year.

2. Length of LIC Races

Ardgour Race	18.6km
Tarras Race to Jolly Rd	16.8km
Upper Main Tarras Race	10.0km
Lower Main Tarras	3.6km
McKay Race	6.8km

Total 55.8km

See map

3. Practical issues in relation to the Tarras Creek map

Many of the Lindis Irrigation Company members farm in the Tarras creek area. By excluding these farms and farmers the ORC will and already has to some degree disenfranchised these shareholders. For the LIC to progress their vision of change they need all shareholders to buy in to the plan. The

Lindis Irrigation Company Constitution requires 75% support to be able to advance the changes required. Many of these shareholders need to believe there is an option for the future before they will work pro actively towards a new system. A no vote by the LIC shareholders will result in status quo. LIC also provides water for irrigation on the golf course which will need to be considered in these changes and it is most likely many club members will be unaware of their water source. By excluding the Tarras creek some of these irrigators are left without any option for water use. They are excluded from the Lindis River and as we have heard do not practically have access to the Clutha River. The Tarras Aquifer is also not an alternate source. Any irrigator that has sunk a bore in this aquifer or tried to pump water will know that the water does not readily flow through the substrate at a rate that replenishes the bore site quickly enough for pumping at rates needed for irrigation unlike the Bendigo Aquifer. Transmissivity is very low.

4. Primary Block calculation

The actual use is currently 2300L/sec this has been calculated using water records of the current takes. This could in fact be considered the primary block however LCG have estimated that further efficiency improvements could be achieved with improved transport mechanisms such as the conversion of races to piped delivery.

5. Residual flows on the main stem

Residual flows are considered for the purpose of addressing values at the point of take. In this Plan Change process all values in the main stem are being considered. Relitigating these issues again through the consent replacement process within the next few years will be unnecessary, expensive and only involve the parties who have submitted to this plan change.

The new intake sites lower in the catchment will most likely be installed as galleries in the Lindis ribbon aquifer. This will keep the structures safe from floods, debris and provide a secure site. The subsequent impact on the river flow will be buffered and have less of an impact than direct river intake giving less need for any residual flow consideration.

The size of the individual take rate relative to the size of the river flow will be small. This also reduces the requirement for any residual flow at the point of take.

It is expected that the majority of takes will be in a hydraulically similar reach (Ardgour Rd Bridge to the Ardgour Flow recorder) thus the minimum flow will provide for instream values.

The residual flow policy in the RPW does not incorporate the ability to set residual flows for water sharing purposes.

6. Matter of clarification: LIC changes

The vision for the dismantling of LIC and the replacement of intakes throughout the Lower Lindis will not involve the construction of a replacement collective scheme. There will ultimately be new intakes sites that individually constructed and owner operated by previous LIC shareholders. There maybe a few shared intakes sites, pumps and pipes but none on the new structures will be owned by LIC. The links between the intakes sites will be purely in the form of a low flow sharing agreement and possibly consent condition.